REMARKS

Claims 1-3, 5-15 and 17-19 are pending in the application. Claims 4 and 16 were previously canceled.

Entry of the Amendment and reconsideration and review of the claims on the merits are respectfully requested in view of the following remarks.

Allowable Subject Matter

Applicants appreciate the Examiner's indication that Claims 6, 18 and 19 would be allowable if rewritten in independent form.

Applicants submit that Claims 6, 18 and 19 along with the remaining pending claims are allowable based on the remarks provided herein.

Response to Claim Objection

The Examiner states that Claim 10 is objected to because at line 3, "the portion" should be - - a portion - - .

Claim 10 has been amended in accordance with the Examiner's suggestion.

Accordingly, Applicants respectfully request withdrawal of the objection to Claim 10.

Response to Claim Rejections - 35 U.S.C. § 103

A. Claims 1-3, 5, 14 and 15 are rejected under 35 U.S.C. §103(a) as assertedly being unpatentable over Takagi et al. (U.S. Patent No. 6,097,926) in view of Miyabayashi et al. (U.S. Patent No. 5,138,390) as shown by Kanesawa et al. (U.S. Patent No. 6,795,661).

The Examiner cites Takagi as disclosing a fixing device (heating and pressuring means shown in Fig. 65A - elements 388, 313) that fixes toner images on paper of sizes not limited to A4 and a post card size, where the fixing device has a diameter of about 50 mm which calculates into a circumference/perimeter of 157 mm or 15.7 cm.

The Examiner recognizes that Takagi fails to disclose a cleaning sheet used to clean the heating and pressuring means. However, the Examiner cites Miyabayashi as disclosing a cleaning sheet (see Fig. 5, element 11) used to clean the fixing roller and pressing roller of stains, which is coated with ethylene-vinyl acetate copolymer as a thermoplastic resin.

The Examiner cites Kanesawa as disclosing printing postcards and photographs of the size 89 mm x 127 mm, which suggests that the circumference of Takagi's fixing roller (157 mm) is longer than either the width (89 mm) or the length of a post card (127 mm).

B. Claims 1, 3 and 11-15 are rejected under 35 U.S.C. §103(a) as assertedly being unpatentable over Imai et al. (U.S. Publication No. 2002/190060) in view of Miyabayashi et al. as shown by Kanesawa et al.

The Examiner cites Imai as disclosing a fixing belt (see Fig. 10, element 36) with a diameter of 50 mm and comprising an endless belt base of polyimide resin and a releasing layer of one of silicone rubber, fluorocarbon rubber, PTFE, PFA, and FEP, where various types of

sheets can be fixed by the fixing belt, and where the perimeter of the fixing belt is equal to 15.7 cm.

The Examiner recognizes that Imai fails to disclose a cleaning sheet having a length greater than the fixing belt's perimeter and smaller than the smallest image receiving sheet. However, the Examiner cites Miyabayashi as disclosing a cleaning sheet 11 used to clean the fixing roller and pressing roller of stains, and cites Kanesawa as disclosing printing postcards and photographs of the size 89 mm x 127 mm.

C. Claims 8 and 17 are rejected under 35 U.S.C. §103(a) as assertedly being unpatentable over Imai et al., as modified by Miyabayashi et al. and shown by Kanesawa et al., as applied to Claims 1, 3, and 11-15 above, and further in view of Chen et al. (U.S. Publication No. 2001/0021491)..

The Examiner recognizes that Imai as modified by Miyabayashi as shown by Kanesawa fails to disclose a cooling device. The Examiner cites Chen as disclosing a blower 16 used to cool the fixing belt 14.

D. Claims 7, 9 and 10 are rejected under 35 U.S.C. §103(a) as assertedly being unpatentable over Imai et al., as modified by Miyabayashi et al. and shown by Kanesawa et al., as applied to claims 1, 3, and 11-15 above, and further in view of Otsuka et al. (U.S. Patent No. 6,094,559).

The Examiner recognizes that Imai as modified by Miyabayashi as shown by Kanesawa fails to disclose (1) that the size of the cleaning sheet is selected from the group consisting of L-size, A6-size, A4-size, B4-size, A3-size, B5-size, postcard-size, and business card-size; (2) that

the fixing temperature at which toner is fixed on the image-receiving sheet in the image forming apparatus differs from a temperature during cleaning at a portion of the image forming apparatus where fixing is conducted; and (3) that the transport speed during cleaning is different than the transport speed of toner fixing.

The Examiner cites Otsuka as disclosing an image forming apparatus with a cleaning mode for cleaning the fixing member in which a sheet is pinched by the nip, and the sheet is conveyed in a direction by repeating rotation and stoppage of the rotatable fixing member, where the energization of a heating means of the fixing device is changed from ON to OFF in the cleaning mode, and where the rotatable fixing member is also stopped during cleaning mode.

The Examiner asserts that it would have been obvious to one of ordinary skill in the art to modify the method of Imai in view of Miyabayashi as shown by Kanesawa with that of Otsuka so that the sizes of the cleaning sheet do not differ from the sizes of the imaging sheets so that supply trays can be used for both cleaning sheet and imaging sheets and heating can be conserved for cleaning the fixing device to avoid overheating.

Applicants respectfully traverse the obviousness rejections. The cited references do not disclose or render obvious the process for cleaning or the image forming apparatus of the present invention.

The present invention is directed to a process for cleaning which comprises: heating and pressuring a cleaning sheet with a heating and pressuring means, the cleaning sheet being fed through an image forming apparatus, such that stains are removed, wherein the heating and pressuring means is at least one of a fixing belt and a fixing roller; and the cleaning sheet

comprises a support and a layer comprising a thermoplastic resin over the support, the cleaning sheet satisfying at least one of the following formulae:

$$L1\ (cm) > L2\ (cm) \text{ and}$$

$$L1\ (cm) > L3\ (cm)$$

wherein L1 is the length of the cleaning sheet in a direction of feeding the cleaning sheet, L2 is the perimeter of the fixing roller, and L3 is the perimeter of the fixing belt, and wherein the process satisfies at least one of the following formulae:

$$L2\ (cm) > L4\ (cm) \text{ and}$$

$$L3\ (cm) > L4\ (cm)$$

wherein L2 and L3 are the same as L2 and L3 above, respectively, and L4 represents the length of the smallest electrophotographic image-receiving sheet in a direction of feeding the electrophotographic image-receiving sheet.

The Examiner's position is that Takagi et al. disclose a postcard as the smallest size of an electrophotographic sheet, and a fixing device comprising a fixing roller having a perimeter of approximately 157 mm (3.14 x 50 mm =157 mm). The Examiner cites Kanesawa et al. for disclosing that the size of the postcard is 89 mm x 127 mm, and cites Miyabayashi et al. for disclosing a cleaning sheet having a size of 220 mm x 300 mm or 220 mm x 220 mm. The Examiner's position is that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Takagi et al. with that of Miyabayashi et al. so that the fixing device can be further cleaned of stains left behind after fixing toner images.

The Examiner further states in the Office Action as follows (see the Office Action at page

3):

> "[S]ince Takagi discloses printing on post cards, Kanesawa et al. shows it is well known in the art that post cards are of the size of 89 mm x 127 mm. This suggestion shows that a circumference of fixing roller of Takagi et al. (157 mm) is longer than either a width (89 mm) or a length of a post card (127 mm)."

Applicants respectfully traverse this ground of the rejection for at least the following reasons.

First, Takagi et al. discloses several embodiments of the fixing device, and teaches a use of postcards in the 24th embodiment of the fixing device (see Takagi et al. at column 27, line 29 to column 28, line 39). Takagi also discloses that the 24th embodiment of the fixing device has the same structure as that of the 21st embodiment of the fixing device except for a few modifications (see Takagi et al., column 27, lines 57-58), and that in the 21st embodiment of the fixing device, the heating roller has a diameter of 43 mm, and the pressure roller has a diameter of 40 mm. Accordingly, Takagi et al. teaches the perimeters of the fixing rollers to be approximately 135 mm and 125.6 mm in the fixing device for use with the postcards. The perimeter of the fixing roller (157 mm) the Examiner has pointed to is actually the perimeter of the fixing roller in the 40th embodiment of the fixing device. In the description for the 40th embodiment of the fixing device of Takagi et al., there is no teaching or suggestion that printing can be carried out on postcards. Therefore, Applicants submit that it is improper to combine the

size of the postcard from one embodiment of Takagi et al. and the perimeter of the fixing roller (157 mm) from another, different embodiment of Takagi et al.

Further, the Examiner uses the descriptions of Kanesawa et al. as evidencing the size of the postcard. However, Kanesawa et al. merely teaches a size of an L-size photograph, not a standard size of postcards (please compare Kanesawa et al., column 14, lines 36-38, with the present specification, page 9, lines 9-13). Accordingly, Applicants submit that the combination of Takagi et al. and Kanesawa et al. is not motivated and improper.

As discussed above, Takagi et al. in view of Miyabayashi et al. as shown by Kanesawa et al. does not teach or suggest to satisfy all the formulae defined in the present invention. Accordingly, the present invention is not rendered obvious over the cited references.

Similarly, the combination of Imai et al., Miyabayashi et al. and Kanesawa et al. does not teach or suggest the relationship between the perimeters of the fixing roller and fixing belt, and the size of the cleaning sheet, and thus the present invention is also not obvious over these cited references.

Other secondary references to Chen et al. and Otsuka et al. also fail to render obvious the present invention in combination with Miyabayashi et al. and Kanesawa et al.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the obviousness rejections.

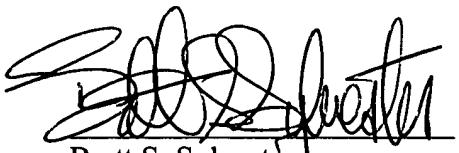
Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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